Caiyun Wang

List of Publications by Year
in descending order

Source: https://exaly.com/author-pdf/2173942/publications.pdf

Version: 2024-02-01

133 papers	8,522 citations	30070 54 h-index	48315 88 g-index
136 all docs	136 docs citations	136 times ranked	11889 citing authors

#	Article	IF	Citations
1	Phase transformation induced benzene rings activation in a metalâ€“organic framework to boost sodium storage performance. Chemical Engineering Journal, 2022, 433, 133508.	12.7	2
2	Bioinspired Catecholâ€Grafting PEDOT Cathode for an Allâ€Polymer Aqueous Proton Battery with High Voltage and Outstanding Rate Capacity. Advanced Science, 2022, 9, e2103896.	11.2	32
3	Efficient Metalâ€Oriented Electrodeposition of a Coâ€Based Metalâ€Organic Framework with Superior Capacitive Performance. ChemSusChem, 2022, 15, .	6.8	15
4	A cobalt-based metalâ€“organic framework electrodeposited on nickel foam as a binder-free electrode for high-performance supercapacitors. New Journal of Chemistry, 2022, 46, 12565-12571.	2.8	7
5	A Battery Method to Enhance the Degradation of Iron Stent and Regulating the Effect on Living Cells. Small Methods, 2022, 6, .	8.6	3
6	Bifunctional air electrodes for flexible rechargeable Zn-air batteries. Chinese Chemical Letters, 2021, 32, 999-1009.	9.0	23
7	Cost-effective mechanochemical synthesis of highly dispersed supported transition metal catalysts for hydrogen storage. Nano Energy, 2021, 80, 105535.	16.0	85
8	Research progress on catalytic pyrolysis and reuse of waste plastics and petroleum sludge. ES Materials & Manufacturing, 2021, , .	1.9	27
9	One-Pot Hydrothermal Synthesis of Solution-Processable MoS₂/PEDOT:PSS Composites for High-Performance Supercapacitors. ACS Applied Materials & Interfaces, 2021, 13, 7285-7296.	8.0	41
10	The 2021 battery technology roadmap. Journal Physics D: Applied Physics, 2021, 54, 183001.	2.8	158
11	Hydrogen Generation and Degradation of Organic Dyes by New Piezocatalytic 0.7BiFeO₃â€“0.3BaTiO₃ Nanoparticles with Proper Band Alignment. ACS Applied Materials & Interfaces, 2021, 13, 11050-11057.	8.0	48
12	Abuseâ€Tolerant Electrolytes for Lithiumâ€Ion Batteries. Advanced Science, 2021, 8, e2003694.	11.2	16
13	Synthesis of Au/UiO-66-NH2/Graphene composites as efficient visible-light photocatalysts to convert CO2. International Journal of Hydrogen Energy, 2021, 46, 11621-11635.	7.1	29
14	A cytocompatible conductive polydopamine towards electrochromic energy storage device. Electrochimica Acta, 2021, 374, 137961.	5.2	22
15	Polyisocyanate bridged environmental graphene/epoxy nanocomposite coatings with excellent anticorrosion performance. Progress in Organic Coatings, 2021, 153, 106167.	3.9	10
16	Strategic Structure Tuning of Yolkâ€Shell Microcages for Efficient Nitrogen Fixation. ChemSusChem, 2021, 14, 2521-2528.	6.8	4
17	Atomic nickel cluster decorated defect-rich copper for enhanced C2 product selectivity in electrocatalytic CO2 reduction. Applied Catalysis B: Environmental, 2021, 291, 120030.	20.2	66
18	A versatile transition metal ion-binding motif derived from covalent organic framework for efficient CO2 electroreduction. Applied Catalysis B: Environmental, 2021, 291, 119915.	20.2	12

#	Article	IF	Citations
19	Poly (triphenylamine)-decorated UIO-66-NH2 mesoporous architectures with enhanced photocatalytic activity for CO2 reduction and H2 evolution. Journal of CO2 Utilization, 2021, 51, 101654.	6.8	10
20	The length dependent selectivity on aligned Cu nanowires for C1 products from CO2 Electroreduction. Electrochimica Acta, 2021, 394, 139099.	5.2	3
21	Porous bowl-shaped VS2 nanosheets/graphene composite for high-rate lithium-ion storage. Journal of Energy Chemistry, 2020, 43, 24-32.	12.9	148
22	Layer-structured niobium oxides and their analogues for advanced hybrid capacitors. Chemical Engineering Journal, 2020, 391, 123489.	12.7	51
23	Fabrication of heterostructured UIO-66-NH2 /CNTs with enhanced activity and selectivity over photocatalytic CO2 reduction. International Journal of Hydrogen Energy, 2020, 45, 30634-30646.	7.1	30
24	A Selfâ€Assembled CO₂ Reduction Electrocatalyst: Posyâ€Bouquetâ€Shaped Goldâ€Polyaniline Coreâ€Shell Nanocomposite. ChemSusChem, 2020, 13, 5023-5030.	6.8	10
25	Recyclable and Reprocessable Crosslinked Rubber Enabled by Constructing Ionic Crosslinked Networks. ACS Sustainable Chemistry and Engineering, 2020, 8, 12999-13006.	6.7	10
26	Highly Sensitive Strain Sensor Based on a Stretchable and Conductive Poly(vinyl alcohol)/Phytic Acid/NH₂-POSS Hydrogel with a 3D Microporous Structure. ACS Applied Materials & Interfaces, 2020, 12, 26496-26508.	8.0	95
27	Electrolytes with reversible switch between liquid and solid phases. Current Opinion in Electrochemistry, 2020, 21, 297-302.	4.8	8
28	Conducting polymer composites for unconventional solid-state supercapacitors. Journal of Materials Chemistry A, 2020, 8, 4677-4699.	10.3	111
29	Energy materials for transient power sources. MRS Bulletin, 2020, 45, 121-128.	3.5	7
30	Stretchability enhancement of buckled polypyrrole electrodes for stretchable supercapacitors via engineering substrate surface roughness. Electrochimica Acta, 2020, 343, 136099.	5.2	17
31	MXene/RGO composite aerogels with light and high-strength for supercapacitor electrode materials. Composites Communications, 2020, 19, 108-113.	6.3	84
32	Hierarchical architectures of mesoporous Pd on highly ordered TiO₂ nanotube arrays for electrochemical CO₂ reduction. Journal of Materials Chemistry A, 2020, 8, 8041-8048.	10.3	15
33	Recent Advances in Co3O4 as Anode Materials for High-Performance Lithium-Ion Batteries. Engineered Science, 2020, , .	2.3	62
34	Tunable Conducting Polymers: Toward Sustainable and Versatile Batteries. ACS Sustainable Chemistry and Engineering, 2019, 7, 14321-14340.	6.7	94
35	Sodiumâ€Ion Batteries: In Situ Fabrication of Branched TiO₂/C Nanofibers as Binderâ€Free and Freeâ€Standing Anodes for Highâ€Performance Sodiumâ€Ion Batteries (Small 30/2019). Small, 2019, 15, 1970158.	10.0	1
36	Fabrication of hierarchically one-dimensional ZnxCd1-xS/NiTiO3 nanostructures and their enhanced photocatalytic water splitting activity. International Journal of Hydrogen Energy, 2019, 44, 30974-30985.	7.1	23

#	Article	IF	Citations
37	Zn-Doped Cu(100) facet with efficient catalytic ability for the CO₂ electroreduction to ethylene. Physical Chemistry Chemical Physics, 2019, 21, 21341-21348.	2.8	25
38	In Situ Fabrication of Branched TiO 2 /C Nanofibers as Binderâ€Free and Freeâ€Standing Anodes for Highâ€Performance Sodiumâ€Ion Batteries. Small, 2019, 15, 1901584.	10.0	39
39	Binderâ€Free Electrodes Derived from Interlayerâ€Expanded MoS₂ Nanosheets on Carbon Cloth with a 3D Porous Structure for Lithium Storage. ChemElectroChem, 2019, 6, 2338-2343.	3.4	22
40	Engineering the poly(vinyl alcohol)-polyaniline colloids for high-performance waterborne alkyd anticorrosion coating. Applied Surface Science, 2019, 481, 960-971.	6.1	27
41	Flexible quasi-solid-state dual-ion asymmetric supercapacitor based on Ni(OH)2 and Nb2O5 nanosheet arrays. Green Energy and Environment, 2019, 4, 382-390.	8.7	27
42	Highâ€Performance Grapheneâ€Fiberâ€Based Neural Recording Microelectrodes. Advanced Materials, 2019, 31, e1805867.	21.0	122
43	Scalable Solution Processing MoS₂ Powders with Liquid Crystalline Graphene Oxide for Flexible Freestanding Films with High Areal Lithium Storage Capacity. ACS Applied Materials & Interfaces, 2019, 11, 46746-46755.	8.0	14
44	Polyaniline Electrochemically Deposited on Tailored Metal Mesh for Dynamically Stretchable Supercapacitors. Journal of the Electrochemical Society, 2019, 166, A3932-A3939.	2.9	13
45	Electrochemical CO2 reduction over nitrogen-doped SnO2 crystal surfaces. Journal of Energy Chemistry, 2019, 33, 22-30.	12.9	38
46	Molybdenum and tungsten chalcogenides for lithium/sodium-ion batteries: Beyond MoS2. Journal of Energy Chemistry, 2019, 33, 100-124.	12.9	174
47	Functionalizing graphene with titanate coupling agents as reinforcement for one-component waterborne poly(urethane-acrylate) anticorrosion coatings. Chemical Engineering Journal, 2019, 359, 331-343.	12.7	82
48	Electrospun CoSe@N-doped carbon nanofibers with highly capacitive Li storage. Journal of Energy Chemistry, 2019, 33, 160-166.	12.9	138
49	Biomedical Applications of Organic Conducting Polymers. , 2019, , 783-812.		1
50	In situ construction of yolkâ€“shell zinc cobaltite with uniform carbon doping for high performance asymmetric supercapacitors. Journal of Materials Chemistry A, 2018, 6, 9109-9115.	10.3	53
51	Oxygen-deficient anatase TiO₂@C nanospindles with pseudocapacitive contribution for enhancing lithium storage. Journal of Materials Chemistry A, 2018, 6, 4013-4022.	10.3	206
52	An Electrosynthesized 3D Porous Molybdenum Sulfide/Graphene Film with Enhanced Electrochemical Performance for Lithium Storage. Small, 2018, 14, 1703096.	10.0	25
53	Magnetorheological technology for fabricating tunable solid electrolyte with enhanced conductivity and mechanical property. Smart Materials and Structures, 2018, 27, 035022.	3.5	5
54	Tunable and Efficient Tin Modified Nitrogenâ€Doped Carbon Nanofibers for Electrochemical Reduction of Aqueous Carbon Dioxide. Advanced Energy Materials, 2018, 8, 1702524.	19.5	232

#	Article	IF	Citations
55	Towards thermally stable high performance lithium-ion batteries: the combination of a phosphonium cation ionic liquid and a 3D porous molybdenum disulfide/graphene electrode. Chemical Communications, 2018, 54, 5338-5341.	4.1	10
56	Superelastic Hybrid CNT/Graphene Fibers for Wearable Energy Storage. Advanced Energy Materials, 2018, 8, 1702047.	19.5	165
57	Recent progress in 2D materials for flexible supercapacitors. Journal of Energy Chemistry, 2018, 27, 57-72.	12.9	179
58	Controlling the morphology, size and phase of Nb2O5 crystals for high electrochemical performance. Chinese Chemical Letters, 2018, 29, 1785-1790.	9.0	56
59	Silicon as a ubiquitous contaminant in graphene derivatives with significant impact on device performance. Nature Communications, 2018, 9, 5070.	12.8	42
60	Porous NaTi2(PO4)3 Nanocubes Anchored on Porous Carbon Nanosheets for High Performance Sodium-Ion Batteries. Frontiers in Chemistry, 2018, 6, 396.	3.6	17
61	Tuning the structure of three dimensional nanostructured molybdenum disulfide/nitrogen-doped carbon composite for high lithium storage. Electrochimica Acta, 2018, 291, 197-205.	5.2	8
62	A smart cyto-compatible asymmetric polypyrrole membrane for salinity power generation. Nano Energy, 2018, 53, 475-482.	16.0	54
63	Engineering Surface Amine Modifiers of Ultrasmall Gold Nanoparticles Supported on Reduced Graphene Oxide for Improved Electrochemical CO₂ Reduction. Advanced Energy Materials, 2018, 8, 1801400.	19.5	100
64	Vacancy-induced sodium-ion storage in N-doped carbon Nanofiber@MoS2 nanosheet arrays. Electrochimica Acta, 2018, 285, 301-308.	5.2	111
65	Insight into the Synergistic Effect on Selective Adsorption for Heavy Metal Ions by a Polypyrrole/TiO₂ Composite. Langmuir, 2018, 34, 10187-10196.	3.5	45
66	Hierarchical porous PANI/MIL-101 nanocomposites based solid-state flexible supercapacitor. Electrochimica Acta, 2018, 281, 582-593.	5.2	74
67	A â€œTandemâ€•Strategy to Fabricate Flexible Graphene/Polypyrrole Nanofiber Film Using the Surfactant-Exfoliated Graphene for Supercapacitors. ACS Applied Materials & Interfaces, 2018, 10, 22031-22041.	8.0	40
68	Fe-doped phosphorene for the nitrogen reduction reaction. Journal of Materials Chemistry A, 2018, 6, 13790-13796.	10.3	144
69	A nitrogen-doped three-dimensional carbon framework for high performance sodium ion batteries. RSC Advances, 2017, 7, 1588-1592.	3.6	20
70	A robust free-standing MoS2/poly(3,4-ethylenedioxythiophene):poly(styrenesulfonate) film for supercapacitor applications. Electrochimica Acta, 2017, 235, 348-355.	5.2	84
71	High-performance hybrid carbon nanotube fibers for wearable energy storage. Nanoscale, 2017, 9, 5063-5071.	5.6	95
72	Rapid formation of self-organised Ag nanosheets with high efficiency and selectivity in CO₂electroreduction to CO. Sustainable Energy and Fuels, 2017, 1, 1023-1027.	4.9	49

#	Article	IF	Citations
73	Selfâ€Assembly of Flexible Freeâ€Standing 3D Porous MoS₂â€Reduced Graphene Oxide Structure for Highâ€Performance Lithiumâ€Ion Batteries. Advanced Functional Materials, 2017, 27, 1700234.	14.9	181
74	A Biodegradable Thin-Film Magnesium Primary Battery Using Silk Fibroinâ€“Ionic Liquid Polymer Electrolyte. ACS Energy Letters, 2017, 2, 831-836.	17.4	134
75	High performance carbon-coated hollow Ni₁₂P₅ nanocrystals decorated on GNS as advanced anodes for lithium and sodium storage. Journal of Materials Chemistry A, 2017, 5, 22316-22324.	10.3	65
76	A Cytocompatible Robust Hybrid Conducting Polymer Hydrogel for Use in a Magnesium Battery. Advanced Materials, 2016, 28, 9349-9355.	21.0	67
77	Effects of Carbon Content on the Electrochemical Performances of MoS₂â€“C Nanocomposites for Li-Ion Batteries. ACS Applied Materials & Interfaces, 2016, 8, 22168-22174.	8.0	46
78	A Free-standing Graphene-Polypyrrole Hybrid Paper via Electropolymerization with an Enhanced Areal Capacitance. Electrochimica Acta, 2016, 212, 561-571.	5.2	66
79	Tin nanoparticles decorated copper oxide nanowires for selective electrochemical reduction of aqueous CO₂to CO. Journal of Materials Chemistry A, 2016, 4, 10710-10718.	10.3	129
80	Boric Acid Assisted Reduction of Graphene Oxide: A Promising Material for Sodium-Ion Batteries. ACS Applied Materials & Interfaces, 2016, 8, 18860-18866.	8.0	96
81	Toward Biodegradable Mgâ€“Air Bioelectric Batteries Composed of Silk Fibroinâ€“Polypyrrole Film. Advanced Functional Materials, 2016, 26, 1454-1462.	14.9	99
82	Superior sodium-ion storage performance of Co₃O₄@nitrogen-doped carbon: derived from a metalâ€“organic framework. Journal of Materials Chemistry A, 2016, 4, 5428-5435.	10.3	159
83	Novel reversible and switchable electrolytes based on magneto-rheology. Scientific Reports, 2015, 5, 15663.	3.3	9
84	Reduced graphene oxide and polypyrrole/reduced graphene oxide composite coated stretchable fabric electrodes for supercapacitor application. Electrochimica Acta, 2015, 172, 12-19.	5.2	103
85	A facile approach for fabrication of mechanically strong graphene/polypyrrole films with large areal capacitance for supercapacitor applications. RSC Advances, 2015, 5, 102643-102651.	3.6	39
86	Flexible free-standing graphene paper with interconnected porous structure for energy storage. Journal of Materials Chemistry A, 2015, 3, 4428-4434.	10.3	55
87	A highly nitrogen-doped porous graphene â€“ an anode material for lithium ion batteries. Journal of Materials Chemistry A, 2015, 3, 18229-18237.	10.3	101
88	Flexible Electrodes and Electrolytes for Energy Storage. Electrochimica Acta, 2015, 175, 87-95.	5.2	65
89	Sodium-difluoro(oxalato)borate (NaDFOB): a new electrolyte salt for Na-ion batteries. Chemical Communications, 2015, 51, 9809-9812.	4.1	61
90	Manganese dioxide-anchored three-dimensional nitrogen-doped graphene hybrid aerogels as excellent anode materials for lithium ion batteries. Journal of Materials Chemistry A, 2015, 3, 10403-10412.	10.3	96

#	Article	IF	Citations
91	3D braided yarns to create electrochemical cells. Electrochemistry Communications, 2015, 61, 27-31.	4.7	18
92	Ammonia borane confined by nitrogen-containing carbon nanotubes: enhanced dehydrogenation properties originating from synergetic catalysis and nanoconfinement. Journal of Materials Chemistry A, 2015, 3, 20494-20499.	10.3	34
93	Biocompatible Ionic Liquidâ€“Biopolymer Electrolyte-Enabled Thin and Compact Magnesiumâ€“Air Batteries. ACS Applied Materials & Interfaces, 2014, 6, 21110-21117.	8.0	99
94	Three dimensional (3D) printed electrodes for interdigitated supercapacitors. Electrochemistry Communications, 2014, 41, 20-23.	4.7	179
95	Graphene cryogel papers with enhanced mechanical strength for high performance lithium battery anodes. Journal of Materials Chemistry A, 2014, 2, 1325-1331.	10.3	40
96	Mechanically strong high performance layered polypyrrole nano fibre/graphene film for flexible solid state supercapacitor. Carbon, 2014, 79, 554-562.	10.3	109
97	A novel codoping approach for enhancing the performance of polypyrrole cathode in a bioelectric battery. Carbon, 2014, 80, 691-697.	10.3	4
98	One-Step Synthesis of Graphene/Polypyrrole Nanofiber Composites as Cathode Material for a Biocompatible Zinc/Polymer Battery. ACS Applied Materials & Interfaces, 2014, 6, 16679-16686.	8.0	65
99	Polypyrrole as cathode materials for Zn-polymer battery with various biocompatible aqueous electrolytes. Electrochimica Acta, 2013, 95, 212-217.	5.2	35
100	Intrinsically Stretchable Supercapacitors Composed of Polypyrrole Electrodes and Highly Stretchable Gel Electrolyte. ACS Applied Materials & Interfaces, 2013, 5, 9008-9014.	8.0	190
101	High strain stretchable solid electrolytes. Electrochemistry Communications, 2013, 32, 47-50.	4.7	50
102	Polypyrrole doped with redox-active poly(2-methoxyaniline-5-sulfonic acid) for lithium secondary batteries. RSC Advances, 2013, 3, 5447.	3.6	27
103	Flexible cellulose based polypyrroleâ€“multiwalled carbon nanotube films for bio-compatible zinc batteries activated by simulated body fluids. Journal of Materials Chemistry A, 2013, 1, 14300.	10.3	29
104	Electrochemically synthesized stretchable polypyrrole/fabric electrodes for supercapacitor. Electrochimica Acta, 2013, 113, 17-22.	5.2	49
105	A battery composed of a polypyrrole cathode and a magnesium alloy anodeâ€”Toward a bioelectric battery. Synthetic Metals, 2012, 162, 584-589.	3.9	42
106	All-polymer battery system based on polypyrrole (PPy)/para (toluene sulfonic acid) (pTS) and polypyrrole (PPy)/indigo carmine (IC) free standing films. Electrochimica Acta, 2012, 83, 209-215.	5.2	56
107	Electrodeposition of pyrrole and 3-(4-tert-butylphenyl)thiophene copolymer for supercapacitor applications. Synthetic Metals, 2012, 162, 2216-2221.	3.9	36
108	Electrochemically Synthesized Polypyrrole/Graphene Composite Film for Lithium Batteries. Advanced Energy Materials, 2012, 2, 266-272.	19.5	155

#	Article	IF	Citations
109	Nanobionics: the impact of nanotechnology on implantable medical bionic devices. Nanoscale, 2012, 4, 4327.	5.6	64
110	Electrodeposited polypyrrole (PPy)/para (toluene sulfonic acid) (pTS) free-standing film for lithium secondary battery application. Electrochimica Acta, 2012, 60, 201-205.	5.2	60
111	Polypyrrole coated nylon lycra fabric as stretchable electrode for supercapacitor applications. Electrochimica Acta, 2012, 68, 18-24.	5.2	197
112	Indigo carmine (IC) doped polypyrrole (PPy) as a free-standing polymer electrode for lithium secondary battery application. Solid State Ionics, 2012, 215, 29-35.	2.7	29
113	Buckled, Stretchable Polypyrrole Electrodes for Battery Applications. Advanced Materials, 2011, 23, 3580-3584.	21.0	211
114	Functionalised polyterthiophenes as anode materials in polymer/polymer batteries. Synthetic Metals, 2010, 160, 76-82.	3.9	51
115	Organic bionics. , 2010, , .		1
116	Nanoelectrodes: energy conversion and storage. Materials Today, 2009, 12, 20-27.	14.2	61
117	Ionic liquid as electrolyte in a self-powered controlled release system. Sensors and Actuators B: Chemical, 2009, 141, 452-457.	7.8	8
118	Electrochemical Properties of Graphene Paper Electrodes Used in Lithium Batteries. Chemistry of Materials, 2009, 21, 2604-2606.	6.7	546
119	Direct Growth of Flexible Carbon Nanotube Electrodes. Advanced Materials, 2008, 20, 566-570.	21.0	168
120	A galvanic cell driven controlled release system based on conducting polymers. Sensors and Actuators B: Chemical, 2008, 129, 605-611.	7.8	12
121	Polyaniline and polyanilineâ€“carbon nanotube composite fibres as battery materials in ionic liquid electrolyte. Journal of Power Sources, 2007, 163, 1105-1109.	7.8	108
122	Novel fullerene-functionalised poly(terthiophenes). Journal of Electroanalytical Chemistry, 2007, 599, 79-84.	3.8	16
123	Functionalized polythiophene-coated textile: A new anode material for a flexible battery. Journal of Power Sources, 2006, 156, 610-614.	7.8	64
124	Lithiumâ€“Polymer battery based on polybithiophene as cathode material. Journal of Power Sources, 2006, 159, 708-711.	7.8	20
125	Highly-flexible fibre battery incorporating polypyrrole cathode and carbon nanotubes anode. Journal of Power Sources, 2006, 161, 1458-1462.	7.8	52
126	Potential Application of Solid Electrolyte P11 OH in Ni/MH Batteries. Synthetic Metals, 2005, 152, 57-60.	3.9	9

#	Article	IF	Citations
127	Electrochemical synthesis of polypyrrole films using stainless steel mesh as substrate for battery application. Synthetic Metals, 2005, 153, 117-120.	3.9	24
128	A novel cureless pure lead oxide plate for valve-regulated lead-acid batteries. Journal of Applied Electrochemistry, 2004, 34, 1127-1133.	2.9	0
129	Fabrication and Properties of Spray-Dried Nanofeatured Spherical Ni(OH)₂ Materials. Journal of Nanoscience and Nanotechnology, 2002, 2, 675-678.	0.9	3
130	A new process for fabrication of metal-hydride electrodes for nickelâ€“metal hydride batteries. Journal of Alloys and Compounds, 2002, 330-332, 760-765.	5.5	6
131	Ni/Al/Co-substituted Î±-Ni(OH)2 as electrode materials in the nickel metal hydride cell. Journal of Alloys and Compounds, 2002, 330-332, 802-805.	5.5	31
132	Structural study of Al-substituted nickel hydroxide. Solid State Ionics, 2002, 148, 503-508.	2.7	38
133	Surface modification of Mg2Ni alloy in an acid solution of copper sulfate and sulfuric acid. Journal of Alloys and Compounds, 1999, 285, 267-271.	5.5	32